

ARCHAEOLOGY

Lithic Laboratory Will Study Stone Age Arts

LOST arts of the Stone Age are to be re-discovered, in a brand-new project of science. A Lithic Laboratory, opening its doors January first, will have for its task the study of stone implements, such as Indians of eastern United States used to turn out by thousands.

Dr. H. C. Shetrone, director of the Ohio State Museum, and also of the laboratory, announced the opening to the American Anthropological Association. The laboratory will be at Ohio State Museum, Columbus.

"Chipping of flint, as such, is not a lost art," Dr. Shetrone emphasized. "Many people have been able to duplicate common types of prehistoric stone tools. But elusive techniques have been forgotten, and to the layman constitute a lost art."

Lost arts of Stone Age man, he explained, include making thin, slender knives out of flint or obsidian, which is a brittle black volcanic glass. Another forgotten art is how to flute a stone dart in the manner used by the oldest known American hunters, the ancient Folsom Men who pursued mammoth and bison in the wilderness.

"It is an interesting observation," said Dr. Shetrone, "that primitive man could do something which, with our vaunted civilization, we so far have not done."

The Lithic Laboratory, by studying types of stone tools, techniques of making them, materials used, and other facts, expects to gain valuable information about the American aborigines. Their tools are clues to their origin, relationships of one group of natives with another, their wanderings, and trade routes.

To learn more about these prehistoric events, Dr. Shetrone said, "samples of flint, worked and unworked, from all sections of the eastern United States will be assembled in the Laboratory for purposes of study."

Science News Letter, January 8, 1938

MEDICINE

Rat Cherishes Squab Instead of Eating It

THE spectacle of a healthy, grown-up female rat cherishing and mothering a tender young squab, just because a few drops of a hormone from the pituitary gland had been injected into the rat's body, was described by Prof. Charles R. Stockard of Cornell Univer-

sity Medical College at a meeting of the New York Academy of Medicine.

Prof. Stockard used this phenomenon, discovered by Dr. Oscar Riddle of the Carnegie Institution of Washington's laboratories at Cold Spring Harbor, to illustrate the powerful influence that hormones or gland secretions may exert on the body of man and other animals. The rat he talked about was a perfectly normal rat that ordinarily would have made a prompt meal of the tender meat of the squab. The only difference in this rat was the few drops of hormone.

Hormones have other effects on the body. Together with the nervous system and brain, they are responsible for all the different parts and mechanisms of the body working together as a whole. Hormones and nerves, moreover, depend on each other. Nerves stimulate glands to secrete hormones and hormones stimulate nerves to control muscles, even in such simple movements as those involved in walking and talking. Which of the two is more important may be surmised from the fact that hormone control is an older and more primitive method of integration than the nervous mechanism. Plants, for example, do not have anything like nerves, but they do produce hormones for controlling and integrating life processes. One of these, a growth-producing hormone, has actually been isolated from the tips of young plants.

Science News Letter, January 8, 1938

GENERAL SCIENCE

Prof. Wesley C. Mitchell Named AAAS President

See Front Cover

FOR the first time in many years a representative of the social sciences was elected to the presidency of the American Association for the Advancement of Science when Dr. Wesley C. Mitchell was chosen to head the organization next year.

Dr. Mitchell is professor of economics at Columbia University and director of research of the National Bureau of Economic Research in New York City. He holds doctors' degrees from the University of Chicago and Columbia.

Dr. Mitchell was born in Rushville, Ill., 63 years ago. He has gained recognition as a student of business cycles. In addition to his long career as an economist and teacher, he has served on many government technical committees. He served as chairman of the President's Committee on Social Trends from 1929 to 1933. He was a member of the National Resources Board, 1934-35.

Science News Letter, January 8, 1938

IN SCIENCE

ENGINEERING

Calls For Non-Tamperable Fuses For Fire Prevention

USE of a new type of non-tamperable plug fuse, which cannot be altered to permit overloading electrical wires, is urged as a safety measure by Dr. Morton G. Lloyd, chief of the Safety Codes Section of the National Bureau of Standards in a paper prepared for publication in the Proceedings of the International Association of Electrical Inspectors.

Scores of fires have resulted from the practice of bridging fuses or inserting larger ones in an electrical circuit to permit a larger current than the wires were designed to carry, Dr. Lloyd reports.

The new plug cannot be bridged internally and plugs of different ratings are not interchangeable. Eight cases in which persons lost their lives in fires resulting from plugs of the older type which were tampered with are cited as additional proof of the necessity for using fool-proof fuse plugs.

In hundreds of places throughout the United States it is customary either to bridge a fuse to increase the capacity of a particular electrical circuit or to insert a fuse of a larger rating. "The practice," the Standards Bureau scientist asserts, "is analogous to tying down the safety valve on a steam boiler and may have almost as serious results."

Science News Letter, January 8, 1938

PLANT PHYSIOLOGY

Ultraviolet May Kill Part Of Plant's Growth Hormone

ULTRAVIOLET light and blue-violet visible light make plants grow more slowly by destroying part of the growth hormones, or growth-promoting substances that stimulate their increase in length, Dr. H. W. Popp and H. R. C. McIlvaine of Pennsylvania State College reported to the A.A.A.S. They tested thousands of turnip seedlings under various colored light filters, and found maximum growth-checking effect at the shortwave end of the spectrum.

Science News Letter, January 8, 1938

E FIELDS

GEOLOGY

North Carolina Gold Mines Operating In New Boom

NORTH Carolina landowners are hunting gold again with more eagerness than at any time since the gold rush of '49 to California closed down all but the most prosperous mines in that state, it is reported.

As a result of present prospecting, additional mines will be in operation by the spring of next year, H. J. Bryson, state geologist and chief of the Mineral Resources Division of the Department of Conservation and Development, predicts.

Six large gold mines in the state are producing \$200,000 worth of the precious metal annually. New additions to the number of plants are expected to boost the total materially.

The most recent gold mine to go into full production is the Capps Mine, Mecklenburg County, owned by a Toronto, Canada, syndicate, it was stated. A new 100-ton cyanide reduction mill was completed a few weeks ago and was placed in production the last week in November. Ore yielding between ten and twelve dollars of the precious metal per ton is being handled in the mill.

One gold mine, located within the city limits of Charlotte, the largest city in the state, has produced \$200,000 worth of gold during the last two years.

Gold mining revived to some extent when the price of gold was boosted to \$35 an ounce in 1933.

Science News Letter, January 8, 1938

BIOLOGY

Life Seen As Basically An Organizing Process

LIFE IS basically a process whereby things that are simple and random in arrangement in the non-living state become complex and definitely ordered in the living condition. Search for the secret of this organizing process was the subject of an address by Prof. Ralph S. Lillie of the University of Chicago, as presiding officer of the section on zoology of the American Association for the Advancement of Science.

"The vital impulse—whatever its ultimate nature may be—has as its natural tendency or effect the synthesis of beings or systems which combine with complex organization and activity a persistent and characteristic unity," Prof. Lillie said. "No such integration is discernible in the materials before they are thus assembled and unified."

Partial glimpses of the means through which life controls and arranges its raw materials are given in such life processes as those of the genes or hereditary units, of hormones or cell secretions, and of the still-unidentified "organizer" substances that decide where and of what size and shape the various organs of an animal shall be.

In the non-living world, approaches to the same kind of process are seen in the "self-reduplicative" activities of ultraviruses and bacteriophage. These are now pretty generally acknowledged to be large but non-living protein molecules.

Prof. Lillie asked: "Are there constant elements or modes of action in living organisms which are not present in non-living nature?"

To the avowed belief of many scientists that all life can ultimately be reduced to statement in terms of "dead" chemistry and physics, he opposed: "My own conviction is that no merely physical conception is sufficient. But I say this without prejudice to the physical methods of analysis in biology. These are indispensable."

Finally, Dr. Lillie pointed out, life displays "spontaneous or creative activity" which tends to escape the nets of explanation which science would weave for it:

"Science, as science, is concerned with the stable or verifiable characters of organisms; it is these alone that biologists may hope to understand by reference to physical models. The novelty-producing or creative character must be referred to other factors, equally deep-seated and equally characteristic of natural existence.

"Of these factors science can at present give no account; can it ever give an account? The creative is that which escapes or transcends rule; but what is not in accordance with rule lies outside science; in an evolving universe all the rules are not yet made.

"Biologists need not be disturbed by this consideration; the scientific path remains clear and its outlook is fuller of promise than ever before. There is an incomparably rich field in the determination of the natural constants of vital phenomena."

Science News Letter, January 8, 1938

PUBLIC HEALTH

Three Quarters of a Million Lives Saved Each Year

PROFITS in terms of human lives ran to over three-quarters of a million in one year, as shown by a "profit and loss statement of human lives" issued by the Metropolitan Life Insurance Company. This means that nearly one million human lives, 768,402 by actual count, were saved in one year as a result of modern improvements in medical and health facilities.

The savings were made in the year 1935, latest for which complete data are available. In that year there were 1,207,359 actual deaths of white persons in the United States. If the death rate, figured as deaths per 100,000 population, for the year 1900, had prevailed in 1935, there would have been 1,975,761 deaths in 1935. Subtracting the actual number from the computed number gives the 768,402 lives that were saved in the one year.

The profit and loss statement shows that the human life savings were made by prevention of deaths from eleven different causes. The debit side of the books showed an increase of lives lost due to four causes, but even these increases were not enough to offset the other savings so that the balance shows a substantial profit.

The changes in death rates on the profit side were in tuberculosis, with a saving of more than 173,000 lives; influenza and pneumonia, with a saving of 122,000 lives; diarrhea and enteritis, with a saving of 108,000 lives, mostly infants and young children; chief childhood diseases, with a saving of 59,000 lives; typhoid and paratyphoid fevers, with 33,266 lives saved; nephritis (kidney disease), with 25,999 lives saved; cerebral (brain) hemorrhage and softening, with 16,803 lives saved; diseases associated with childbirth, a saving of 4,486; and all other causes, savings of 349,434 lives.

On the debit side, 58,583 additional lives were lost from organic heart disease; 43,021 from cancer; 12,305 from diabetes; and 10,000 from external causes excluding suicide. This last group would probably have figured on the profit side, the life insurance company statisticians point out, if it had not been for deaths in automobile accidents. Deaths from this cause run well in excess of 30,000 a year.

The possibility of doing still better is recognized.

Science News Letter, January 8, 1938